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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/899,632

07/05/2001

John Philip Bolash

2001-0511

5129

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7590

05/06/2004

LEXMARK INTERNATIONAL, INC.  
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EXAMINER

STOCK JR, GORDON J

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/899,632

### Applicant(s)

BOLASH ET AL.1

### Examiner

Gordon J Stock

### Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 6 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-25 is/are allowed.
- 6) ☒ Claim(s) 1,5,6,10-20 is/are rejected.
- 7) ☒ Claim(s) 2-4,7-9 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 5, 6, 10-13, 18-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Walker et al. (6,561,643)**.

As for **claims 1, 5, 6, 10-13, 18-20**, Walker discloses in an advanced media determination system for inkjet printing: a media type detector comprising: a light source; a specular light sensor, a first light sensor; and a determination unit to determine a media type based on a signal ratio of a detected specular light sensor intensity and a detected first light sensor intensity; whereas, gloss is measured (Figs. 21 and 29; col. 28, lines 45-67; col. 29, lines 1-45; col. 36, lines 1-67). Figure 21 suggests that the sensors and the light source are at approximately equal radii. As for measuring a plurality of intensities, Figure 21 shows many light beams entering the two sensors. The measuring is performed prior to a picking of the media (Figs. 25-29). \

As for the first light sensor having a greater flux capability, though the apertures for both have similar dimensions (see Fig. 36), Walker teaches that diffuse light comprises a flame-like scattering and that the specular beam obeys a well-known principle optics (col. 16, lines 11-23). The field stops also are arranged to deal with the flame-like scattering of the diffuse beams and the simple reflection of the specular beam (col. 41, lines 54-65). Therefore, it would be obvious

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to one skilled in the art to have the diffuse sensor have a greater flux capability than the specular light sensor due to the diffuse beams being in a flame-like scattering of a Lambertian distribution. As for the size of the aperture, it would be obvious to one skilled in the art that the diffuse sensor's aperture has to be larger in regards to one direction compared to the specular light sensor in order to guarantee acceptance of the Lambertian distribution of diffuse rays.

3. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Walker et al. (6,561,643)** in view of **Snail (4,815,858)** and **Howarth (4,319,847)**.

As for **claim 14**, Walker discloses everything as above (see claim 13). In addition, Figure 21 has the sensors comprising semicircular cavities. Both Snail and Howarth teach a semicircular arrangement for reflectometry and measuring properties of a sheet (Fig. 2 of Snail; Fig. 2 of Howarth). Therefore, it would be obvious to one skilled in the art to have the detector comprise a semicircular cavity, for semicircular cavities are used in reflectometry and measuring properties of sheets.

4. **Claims 15-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Walker et al. (6,561,643)** in view of **Howarth (4,319,847)** and **Yanagiuchi (6,677,603)**.

As for **claims 15-17**, Walker discloses a specular light sensor; a first light sensor, a specular light sensor, a signal ratio of a detected specular light sensor intensity and the detected first light sensor signal is determinative of a media type of the media (Figs. 21 and 29; col. 28, lines 45-67; col. 29, lines 1-45; col. 36, lines 1-67). As for a linear characteristic range of the sensor, Walker is silent. Howarth teaches that for measuring characteristics of media proper selection of the spectral response of the detector must be accomplished (col. 3, lines 35-40). Yanagiuchi in a medium discriminating device teaches having the intensity fall within the linear

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response of the sensor in order to guarantee a signal free of noise and adjusting the light source if the intensity does not fall within the linear characteristic (Figs. 10 and 12; col. 3, lines 20-5).

Therefore, it would be obvious to one skilled in the art the signal's intensity would fall within a linear characteristic range of the light sensor, for media produce differing linear signal responses upon illumination and that having the intensity fall within the linear response even through adjustment of the light source output demonstrates measurement free of noise and other perturbations within the system.

As for the first light sensor having a greater flux capability, though the apertures for both have similar dimensions (see Fig. 36), Walker teaches that diffuse light comprises a flame-like scattering and that the specular beam obeys a well-known principle optics (col. 16, lines 11-23). The field stops also are arranged to deal with the flame-like scattering of the diffuse beams and the simple reflection of the specular beam (col. 41, lines 54-65). Therefore, it would be obvious to one skilled in the art to have the diffuse sensor have a greater flux capability than the specular light sensor due to the diffuse beams being in a flame-like scattering of a Lambertian distribution. As for the size of the aperture, it would be obvious to one skilled in the art that the diffuse sensor's aperture has to be larger in regards to one direction compared to the specular light sensor in order to guarantee acceptance of the Lambertian distribution of diffuse rays.

***Allowable Subject Matter***

5. **Claims 22-25** are allowed.

**Claims 2-4, 7-9, and 21** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 2**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a media manipulation apparatus “wherein, if a signal of said detected first light sensor intensity falls within the non-linear region of the sensor characteristic curve of the first light sensor, the determination bases the media type determination on the detected specular light sensor intensity, the first light sensor signal detected after said detected first light intensity, and a ratio,” in combination with the rest of the limitations of **claims 2-4**.

As to **claim 7**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a media manipulation apparatus “wherein, if a signal of said detected first light sensor intensity falls within the non-linear region of the sensor characteristic curve of the first light sensor, the determination bases the media type determination on the detected specular light sensor intensity, the first light sensor signal detected after said detected first light intensity, and a ratio,” in combination with the rest of the limitations of **claims 7-9**.

As to **claim 21**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a media type detection method “basing the determination of the media type on an extrapolation of the first light sensor intensity by projecting a signal representative of the first light sensor intensity onto a linear region of a characteristic curve of the first light sensor and by determining a signal ratio of the specular light sensor intensity and the projected first light sensor signal, if it is determined that the first light sensor signal falls within a non-linear region of the first light sensor characteristic curve,” in combination with the rest of the limitations of **claim 21**.

As to **claim 22**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a media type detection method determining if one of the first and second light

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intensities does not fall within a linear region of a characteristic curve of a light sensor, in combination with the rest of the limitations of **claims 22-25**.

***Response to Arguments***

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. However, the applicant's arguments, see Remarks filed April 6, 2004 in regards to the rejections under 35 U.S.C. 112 second paragraph were found persuasive. Subsequently, the rejection of the claims under 35 U.S.C. 112 second paragraph has been withdrawn. In regards to the arguments (Remarks filed April 6, 2004) dealing with Walker et al. (6,561,643) please refer to the new grounds of rejection above.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 6,600,167 to Sano

U.S. Patent 6,725,207 to Swimm

***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

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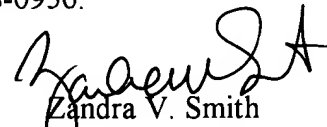
*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DD  
gs

April 23, 2004

  
Zandra V. Smith  
Primary Examiner  
Art Unit 2877